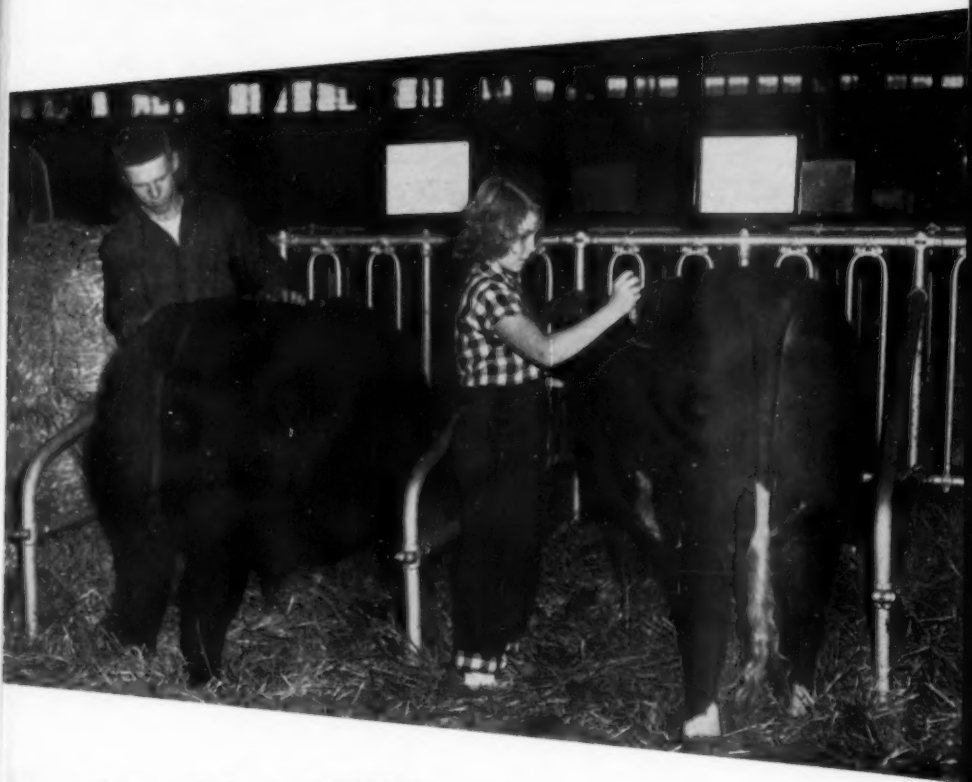
Cornell 4-H Club Bulletin 104

4-H BEEF CATTLE



Harold A. Willman

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4-H Beef Cattle

By Harold A. Willman

Consumer preference for small juicy, high-grade cuts of beef has increased the demand for such cuts of meat on eastern markets. Because of this demand for this class of cattle, generally known as *baby-beef*, and the presence of local markets, an increasingly large number of choice calves have been fattened each year.

Four-H projects with beef cattle give you some experience in selecting, owning, feeding, managing, and fitting cattle for shows and sales. You should look upon your beef project as a business and a chance to make some money if you properly feed and manage your cattle. Whether or not you plan to be a farmer or cattle feeder is not so important as is the fact that you may learn not only how to do a piece of work but to do it well.

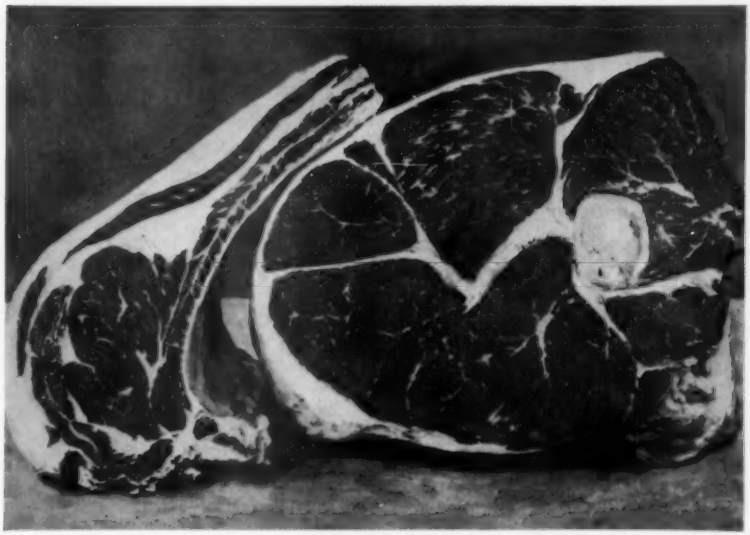

Figure 1. No finer quality meat is produced than that from grain-fed baby-beef steers.

Types of Projects and Requirements

THREE general types of projects are offered: (1) to fatten one or two baby-beef steers, or (2) to start a herd by selecting a heifer, or (3) to feed some cattle commercially for slaughter.

The baby-beef steer project seems to be popular, as many members feed steers year after year. If you enroll in it, you purchase in the fall one or two 400- to 450-pound feeder calves, feed them grain liberally, and sell them about ten months later as fat baby-beef steers.

You may start a **breeding** project with either grade or purebred cattle. It is a way to produce some calves to feed and to sell and also an opportunity to develop an outstanding breeding herd. This project requires more capital than a feeding project, especially with purebreds, and must be regarded as a longer time investment. Heifer projects, of course, develop into cow-projects; therefore the whole purpose of a breeding project is defeated unless good beef-type purebred bulls are available.

Figure 2. This calf, from which the steer shown in figure 3 was developed, was fed about 2 tons of a properly balanced fattening ration and was properly cared for and managed.

The **commercial feeding** project is best suited to the older and more experienced members. For this project, you buy at market prices, from three to five steers, feed them largely on home-grown feeds, and sell them on the open market.

Breeds of Cattle

THE beginner frequently asks, which is the best breed of beef cattle. Actually, no one breed seems to be superior to another in all respects because all the breeds of beef type have been developed to meet the same general requirements.

In choosing a breed, you should consider the popularity of the breed in your locality, the type and breeding which is available at prices you can pay, your personal preference, and the like. For 4-H steer feeding projects, however, remember that the breed is not nearly so important as is the individuality or the type of the animal.

Of the several breeds of beef cattle, only three are well-known in New York State. They are the Angus, the Hereford, and the Shorthorn. You can easily identify cattle of these breeds by observing some of the distinguishing

Figure 3. This 4-H steer weighed 1,000 pounds at sale time. This same steer, ten months earlier, when he weighed 450 pounds as a feeder calf, is shown in figure 2.

features. **Angus** cattle are black in color and naturally hornless or polled. Usually, they are not quite so large as Herefords and Shorthorns. **Herefords** are red in color but have white feet, a white face, a white switch, and white markings extend over their shoulders. They are about the size of Shorthorns when mature and are considered a horned breed. There is a hornless or polled strain of Herefords. **Shorthorns** may be red or white, red and white, or roan in color. This breed has rather incurving horns, but a hornless strain has been developed from calves that were naturally polled or hornless.

Starting a Steer Project

BEFORE you buy a baby-beef feeder calf, you should consider such requirements as the amounts, kinds, and costs of feeds, the need of a suitable pen and exercise lot, good management, and halter-breaking. A lack of an understanding of the requirements, especially in the baby-beef feeding project, can result in an unmanageable calf that may be too thin at sale time to return a profit.

If you wish to fatten a baby-beef steer as a 4-H project, you need from 60 to 70 bushels of corn or other suitable concentrates. Grain grown at home is preferred to purchased feed because of the lower cost. For each steer, you also need ¾ ton of good-quality hay and you should be able to buy 500 pounds of a protein supplement. You need a roomy box stall, 1 ton of straw, and a tightly fenced outdoor exercise lot at least 20 by 20 feet in size. Pen, feed, and care for your project animals by themselves, not with the other livestock on the farm.

Most club sales are during August and September; therefore buy a 400- to 450-pound steer calf in October so he will be fat enough by sale time. Since a 300-day feeding period is usually necessary to produce a choice to prime carcass, you need to feed your steer so he will make daily gains of 2 pounds or more, if possible. To do this, each steer may eat as much as, or even exceed, an average of 12 to 14 pounds of grain a day.

At best, beef projects require not only considerable investment in cattle and feed but considerable time, attention, and work on your part. Unless you have the money and facilities and the full interest of your parents, you should delay the start of this project until all conditions are favorable.

Selecting and Buying Calves

SELECT project calves carefully on the basis of type, quality, and the indications of good breeding. Look for choice and fancy feeder calves. As compared with calves of lower grades, they are wider, lower set, straighter in top and bottom lines, deeper bodied, broader and shorter in the head,

shorter in the neck, fuller in the round, and thicker in natural fleshing and muscling.

For breeding heifers, the best type is similar to that of fancy feeder cattle, but more stress should be placed on ancestry, breed character, style, balance, quality, and correctness to the set of hindlegs.

Usually, you can get steer calves from various sources. In some communities, breeders of both purebred and high-quality grade herds offer a few calves for sale. Another source is the annual feeder-calf sales in which the Extension Service and the beef-cattle groups cooperate to offer suitable calves for sale. At some of these, both steer and heifer calves are for sale in lots of several head or as individual animals and are sold by the pound to the highest bidders.

Pay conservative prices for feeder calves, but get the best cattle you can buy. Current market prices are good guides as they closely represent the value of cattle for commercial feeding. You must remember that most 4-H fat

Figure 4. A boy, with the help of his 4-H club agent, selects a low-set, blocky, thickly made feeder calf for his steer project.

steers sell rather close to open-market values. Only a few of the 4-H prize winning baby-beef steers are likely to bring more than market prices at sale time.

It is not so easy to determine what prices to pay for breeding cattle. Prices may vary widely because of type differences, blood lines, and the reputation which some sellers have established as breeders of high-quality cattle. If you wish to start a herd, try to interest some local breeder in helping you get started with a calf of the right type and pedigree. Often many breeders are willing to help boys and girls arrange for the ownership and breeding of project heifers. They can give valuable help also concerning herd health, sire selection, and the registration of purebreds.

Feeding and Management of Steers

FREQUENTLY it has been said that "the eye of the master fattens his cattle." The statement really means that a cattleman's interest and watchfulness are important to his success in fattening cattle. He keeps the quarters clean, dry, properly ventilated and bedded, and tries to prevent conditions that are likely to throw his cattle off-feed or to interfere otherwise with satisfactory gains.

Housing the calf

A few days before you get your calf, clean and bed a box stall and have in it a hay rack that holds at least 8 pounds of loose hay and a sturdy grain box about 6 inches deep, 12 inches wide, and 18 inches long. Make certain that the stall door or gate fastens tightly to prevent your calf from getting out. Guard against letting your steer get away because, once he escapes and gets away, you might be in for a long siege of breaking him to lead. Tie your steer with a halter for a few minutes each day or two to get him halter-wise. Then get your father or the hired man or some other adult to help you teach your steer to lead. A calf that leads is a lot of satisfaction when you get to a show. Do not put off this job because the easiest time to train a steer is when he is small and the weather is pleasant.

Starting steers on feed

When you have a good type of feeder calf, the rest depends upon the feed and care you give him. The best calf obtainable may develop into an ordinary steer if he is not properly fed, and good feeding means more than piling a certain amount of feed before the calf. Follow, as far as possible, the recommended rations on pages 10 and 11.

The type of ration and the amount of grain to use at the start naturally depends on how your calf was handled and fed immediately before you bought him. It is important to know this. A calf that

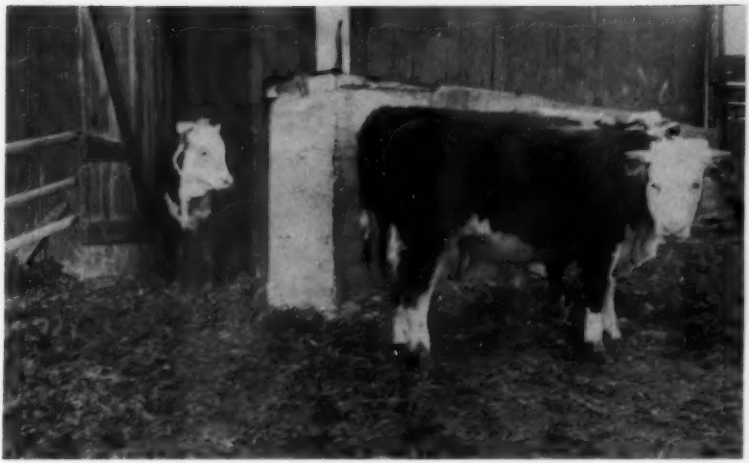

Figure 5. These 4-H steers, housed and fed in a pen in a basement barn, benefit by regular outdoor exercise during summer and winter.

has had access to a creep while still nursing his mother may be more easily and quickly placed on full feed.

For years, many 4-H members have found the following plan satisfactory to get their steer on full feed. Under this plan, allow each day ½ pound of grain mixture at the start for each 100 pounds of a calf's liveweight. For example, if your calf weighs 400 pounds, give him about 2 pounds of grain daily for the first few days. Gradually increase this amount by a handful or two a day according to the calf's appetite to take increases. By the end of the fifth week under this system, your calf would be receiving about 2 pounds of grain for each 100 pounds liveweight, or about 4 pounds at an early morning feeding and the same amount at night. If your calf has not been accustomed to alfalfa hay, give him only small amounts; large amounts may cause bloating. Remember, it is important to make changes in amounts and kinds of feed gradually. The last feeding of grain should always be cleaned up before the next feeding.

Other starting methods may be equally as helpful to you as a guide. For example, you may place 2 pounds of grain in the feed box the first day. Every two or three days after the first day, increase the amount of grain ½ pound, but never feed more than your steer will clean up in an hour after each feeding. Feed from 5 to 7 pounds of good hay daily, but gauge the hay allowances to en-

Figure 6. Good-quality hay, fed in the right proportion to grain, helps to improve a fattening ration.

courage larger daily grain intakes throughout the feeding period.

It takes time and patience under any plan to get a steer on full-feed, so be careful not to throw a calf off-feed. Start your calf on feed gradually. Any increase in the amount of feed should not be so great as to cause scours or other digestive disorders. Once the digestive system is upset, the animal is more likely to have other attacks and will not feed so regularly.

If your calf should go off-feed, reduce the amount of grain by at least one-third of the regular allowance and omit one feeding for a day or two. As the calf's appetite returns, increase the feed each day or two until full feeding is reached.

Grain rations to use

When you start your calf on feed, use a mixture of about two-thirds ground or crushed oats and one-third cracked corn with the addition of some linseed oil meal (pea-size cake), cottonseed meal, or soybean oil meal.

The following starting ration is recommended.

Ration 1

60 pounds of oats (ground or crushed)
35 pounds of coarsely cracked corn
5 pounds of linseed oil meal

Calves that had been creep-fed a grain ration before weaning time may be started on ration Number 2, which consists of 60 percent of corn.

Gradually cut down on the ground or crushed oats and increase the cracked corn until the mixture is about one-third oats and two-thirds corn by the fifth or sixth week. Increase also the linseed oil meal to allow the steer the following grain mixture.

Ration 2

60 pounds of coarsely cracked corn
30 pounds of ground or crushed oats
10 pounds of linseed oil meal

After ten weeks, practically eliminate the ground or crushed oats and give the calves almost entirely cracked corn with 10 percent by weight of linseed oil meal (pea-size cake), cottonseed meal, or other protein mixtures added to the grain mixture used. Although bran is not a necessary part of the

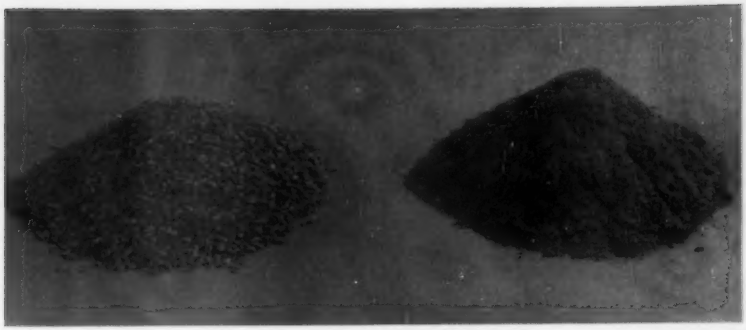

Figure 7. Steers seem to gain more satisfactorily when given coarsely ground (left) rather than too finely ground (right) feeds.

ration, experience has shown that it is a valuable feed and may be used when it can be purchased at a low cost. Suitable rations after your calf has been fed rations Number 1 and 2 for the first ten weeks are the following.

Ration 3

80 pounds of coarsely cracked corn
10 pounds of ground or crushed oats
10 pounds of linseed oil meal

Ration 4

85 pounds of coarsely cracked corn
5 pounds of wheat bran
10 pounds of linseed oil meal

During the last sixty days, you may find it desirable to change the ration slowly again by eliminating the oats and bran.

Alternative feeds

If you feed **corn and cob meal** in place of cracked corn, some adjustments should be made because corn and cob meal is about one-fifth cob by weight and is bulky. Therefore, to maintain the actual daily corn consumption, increase the corn-and-cob-meal ration one-fifth. Even with this increase it is desirable after the first four or five months to replace one-half or more of the corn and cob meal with coarsely cracked corn. You should guard against the possibility of moldy feed which may result from grinding corn on the cob which is not thoroughly dry.

Crushed or cracked barley may replace most of the corn, but it takes 10 pounds of barley in feed value to equal 8 to 9 pounds of corn. Wheat is about equal to corn, but because of its pasty nature should not replace more than one-third of the corn.

Commercial ready-mixed protein supplements often solve the problem of these 4-H members who experience difficulty in buying such single ingredients as lin-

seed oil meal (pea-size) cake or pellets, soybean oil meal, and cottonseed oil meal. Any reliably advertised 30 to 35 percent beef protein supplement should meet a steer's protein needs when fed according to the manufacturer's directions.

Roughages

Successful rations depend in part upon good-quality hay and the use of the right proportion of grain and roughages. Mature cattle can utilize considerable roughage, but calves have a much smaller capacity.

Feed good hay at the rate of not more than from 5 to 7 pounds per day at the start but reduce the amount as the feeding period progresses. If the hay is particularly good, it may be best to feed only the amount you want your calf to have; otherwise, he will eat too much hay and too little grain.

To replace part of the hay, you may want to feed from 3 to 5 pounds of silage daily. Calves are, however, likely to do better when more than one-half of the dry matter in their roughage comes from good legume hay.

Do not turn your steer out to pasture if you want him fat enough to sell as a baby-beef steer at an auction sale. Most baby-beef steers usually need to be full-fed on grain for ten months or longer.

Minerals, salt, and water

A combination of home-grown grains, a good-quality hay, linseed oil meal, or another protein supplement, a mineral mixture, and free access to salt and water furnishes all the nutrients that beef cattle need. Water is required for the calf's health and to soften and to help digest his feed. The minerals and salt are body builders and aid digestive processes.

A good way to feed salt and minerals to your steer is to keep a small amount of each in a two-section box in the stall at all times. Salt may be fed either loose or in block form. A simple mineral mixture, ready mixed or prepared for cattle feeding, is satisfactory.

Comfort and outdoor exercise

You should make every effort to keep your calf comfortable. Clean, cool, and well-bedded pens help. Calves need a dry bed in the summer as well as in the winter. Well-bedded pens encourage faster gains because cattle that are fattening like to lie down considerably. In summertime you can darken the pen by hanging burlap over the windows. It is usually best to take the windows out and to nail burlap over the openings. This allows a free circulation of air, reduces annoyance from flies, and helps to keep the pen cooler. Your calf also needs protection from dampness, rain, wind, and muddy yards. A deep shed or pen open on the south admits fresh air and sunshine. Allow your steers to run into exercise lots during both sum-

Figure 8. Note the comfortable, well-bedded pen, the sturdy, roomy feed box, the salt block, and the pail of water.

mer and winter, for this stimulates their appetites and reduces the need for foot trimming.

Feed regularly

Successful 4-H steer feeders do not feed at 7 o'clock one morning and at 8:30 the next, because regular feeding makes a difference. Besides regularity, feeding according to a calf's appetite is important, too. For example, if your calf does not clean up his grain in an hour or so, take the remaining feed out of the box and give it to something else. Going "off feed" may result more from overfeeding than from any other one cause. In increasing the portions of feed to a calf, a good practice is to add a handful to the feed today and to increase it by two handfuls the day after tomorrow and so on.

Feed three times a day

Club members who have had experience in feeding baby-beef calves know that it is sometimes difficult to get their steers to put much fat on during the hot summer months. For this reason it is a good plan to feed for the heaviest gains during late winter and especially during the spring months. A good way to do this may be to feed your steers three times a day instead of twice, starting by March or April. With this feeding schedule, the first feed should be given early in the morning, the next

around noon, and the third late in the evening. The idea is to have the feeding not too close together and at fairly even intervals. Another plan is to allow a light feeding at noon.

How to estimate gains

Even though you have no scales to weigh cattle, you can estimate the weight of your steer. To do this, place a tape measure around the heart girth, just back of the shoulders of your steer. Draw the tape snugly, then read the measurement in inches. Then compare the weights and measurements with those given in table 1.

You can measure your steer with a dairy tape, but the weights on the reverse side may over-weigh your steer from 5 to 15 percent depending on his condition. To get a more accurate weight estimate of your steer, use the weights given opposite the heart-girth measurements in table 1.

To determine whether your baby-beef steers are making satisfactory daily gains, divide the total gain in weight of each steer by the number of days you have had them on feed. For example, if you start your 400-pound steer on feed on October 1 and he weighed 646 pounds on February 1, he would have gained an average of 2 pounds daily (646—400 pounds) =246 pounds gain. This average is determined by dividing 246 pounds of gain by 123, the number of days on feed. Average daily gains of 2 pounds may be considered very good, although some steers exceed this average.

If your steer falls very far below this level of daily gain, try to find the causes and try to correct them if possible.

Table 1. Weight estimates of steers from heart-girth measurements*

Heart girth	Estimated weight
Inches	*Pounds*
62	654
64	704
66	755
68	809
70	865
72	923
74	983
76	1,045
78	1,109
80	1,176
82	1,244
84	1,315

*Information obtained from weight and tape measurement studies on 145 New York 4-H Club baby-beef steers.

Feeding and Management of Breeding Cattle

Some experience in the feeding of baby beeves or commercial cattle for slaughter will give you a clearer understanding of the feeding and management of breeding cattle. There is some similarity. For example, purebred breeding heifers consigned to breeder sales or to be shown should be handled much as is a baby-beef steer. Con-

Figure 9. Heifers like the one shown in the foreground make a good project.

dition of the coat (general smoothness and appearance of thrift), however, is more important in heifers than is high finish or condition. Feed a protein supplement to steers and heifers but give the heifers less grain and more roughage to encourage the development of good middles.

If you are to manage a herd on a commercial basis, feed weanling calves from 2 to 4 pounds of grain daily during the first winter along with exceptionally good roughage. If you plan to sell breeding stock, probably you should feed even more grain daily in addition to the roughage. Heifer calves that receive some grain develop more rapidly, carry more flesh, and look better to prospective buyers.

Feed calves and heifers for growth

You will need to give calves a good opportunity to grow and to develop if you plan to show or to establish a purebred herd that will attract buyers.

A heifer does not need so much grain as a steer that is being fattened for market. In fact, heifers should be fed mainly for growth and not for high condition. Therefore, heifers may be fed more bulky feeds, such as oats, corn and cob meal, and allowed more silage, hay, and pasture. Heifers that are given 1½ pounds of grain for each 100 pounds of liveweight, along with plenty of good-quality roughage, should be in show condition as yearlings. If you do not plan to show or sell a heifer, you may feed only half this amount of grain. If you do not plan to show at fairs, liberal amounts of good quality hay, good pasture, and other roughages may be adequate for yearlings.

The cow herd

A heifer should not be bred until she is from 18 to 20 months of age or until she weighs about 700 pounds. By this time a well-grown heifer should soon be ready to take her place in the cow herd. Good roughages normally will maintain the cow herd. Occasionally, you may need to feed some grain to your cows and heifers that are nursing calves and are getting thin in winter. If you have low-quality hay, you may need to feed small amounts of grain to keep the breeding cows and heifers gaining in weight during the last three months before calving time.

Guarding the Health of Your Calf

AILMENTS, disease, and poor health can seriously affect the returns from cattle. Fortunately, there are practical and effective ways to control diseases and common troubles that may cause severe losses. You should depend on the help and advice of veterinarians in the treatment of your livestock, but you should also know the nature, the causes, usual methods of spread, common symptoms, and some of the ways to prevent and control losses.

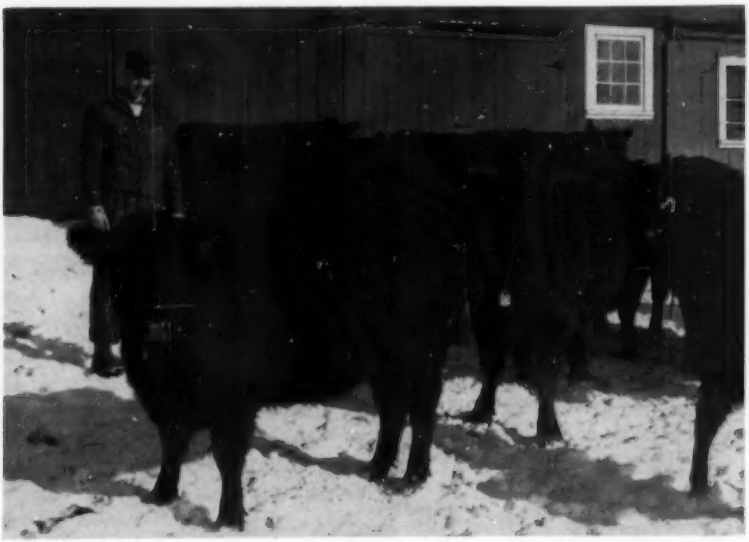

Figure 10. This former 4-H Club member developed a breeding herd of purebred Angus cattle.

Lice

Lice may be controlled by thoroughly dusting your cattle at three 10-day intervals with louse powders containing ½ percent of rotenone or 10 percent of Sabadilla seed. Apply the first dust early, and do not wait until your steer has started to rub off spots of hair. An effective spray for mange will also eradicate lice.

Mange

Mange, commonly known as "barn itch" to some livestock owners, is usually most severe and noticeable during winter. It is caused by tiny mites that dig into and under the skin. As a result, cattle rub, scratch, and lick themselves to get relief and often develop a rough, scurfy skin condition.

Since mange is difficult to diagnose in its early development and is highly contagious to both man and cattle, you should ask the advice and help of a veterinarian.

Ringworm

Ringworm is a parasitic disease which may spread to other cattle. You may easily become infected too, therefore wash your hands thoroughly after treating cattle. The most common remedy is to soften the crusted areas with a small stiff brush and to apply tincture of iodine (7 percent).

Bloat

Bloat affects some steers more than others and may be more severe in some cases than in others. There seems to be no positive cure or prevention for it. Bad cases of bloat are a constant worry to the owner, and steers so affected may be poor gainers. Such cases of bloat should always be treated by a veterinarian or an experienced herdsman who may recommend disposal of the animal or may need to resort to the use of a stomach tube or surgery.

You may be successful in correcting mild cases of bloat by mixing about 10 percent of chopped hay with the grain to slow down fast eating or you might place a bit or stick in the steer's mouth and let him stand with his fore feet higher than his rear feet.

Warts

Warts often appear on the head, neck, and shoulders on steers and may spread to other areas of the body if not checked.

Daily applications of oil and tying cords around the warts are methods of removal which you can try. If these methods fail, consult your veterinarian.

Pink eye

Pink eye, or ophthalmia, is an inflammatory condition of the eyes. This disease may be infectious. House any infected animals in darkened quarters and consult a veterinarian.

Scours

Scours may result from dirty equipment, irregular feeding, overfeeding, or the excessive feeding

of laxative or high-protein feeds. If scouring develops, reduce the grain ration, use some non-legume hay for a few days, or try one feeding of whole oats. Remember, however, that the best cure is prevention. Do not let your calf have moldy feed or eat out of dirty boxes. Always feed at regular hours.

Records of Costs and Returns

Your project, like any other business, requires constant study, careful attention, and a system of records. Records serve as a basis of correct feeding and enable you as a feeder to determine the margin of return over your costs. Your profit depends on the spread, or margin, between the cost of production and the price received for your steer.

Ask your county 4-H Club Agent for a 4-H beef barn record (Project Record 7). This record tells you step by step how to keep useful records on your beef cattle. Without these records you cannot determine how much your steer must bring a pound to pay for his feed and initial cost. Records are also needed in every intelligent plan of developing a breeding herd of cattle.

Judging Cattle

Livestock feeders and breeders should become capable judges, for everytime cattle are bought or sold they are judged. Judging

Figure 11. 4-H Club members learn how to judge beef cattle on a visit to Cornell University.

teaches good standards of type and establishes ideals toward which to work. To become a skillful judge, you must learn to evaluate correctly the merits of a given animal for a given purpose. One of the first steps in learning to judge is to have a mental picture or image of the ideal or true type. Then, of course, as you observe cattle you must constantly try to determine how closely they conform to the ideal.

For slaughter

The judging of fat cattle is based first on condition, second on conformation, and third on quality and dressing percentage. For cattle to go to the top in their class, they must be fat. *Condition* or *finish* refers to the amount of fat or covering an animal carries. You can use your hands to determine how thick and uniform the covering of fat feels over the back, ribs, and shoulders. *Conformation* at its best is represented in blockiness, with great width and thickness from end to end. The hind quarters should be full, deep, and carried down into the twist. The *dressing percentage* of a steer is the percentage that the carcass is of the liveweight. Other things being equal, the fatter steers make the highest yield, but coarse bone, thick hides, and paunchiness lowers the dressing percentage.

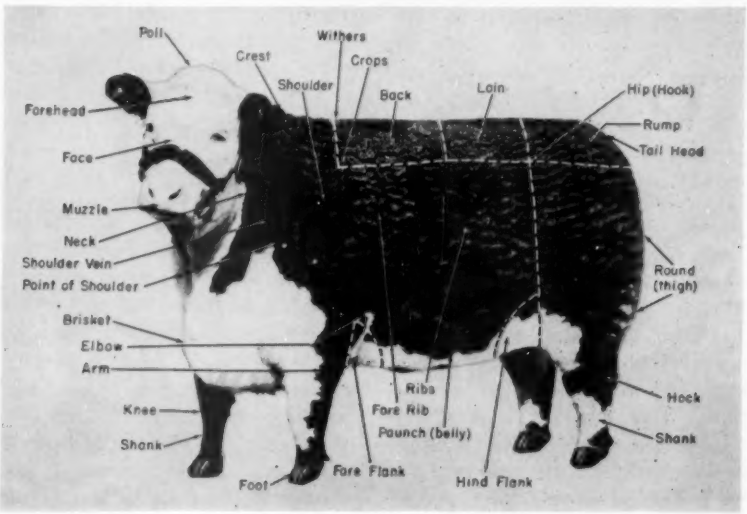

Figure 12. Parts of a beef animal that are most commonly used in judging and describing an individual.

For breeding purposes

The major points in judging cattle for breeding purposes are conformation, breed type, style and balance, femininity or sex character, natural fleshing, quality, and set of feet and legs.

The *conformation* of breeding cattle is the same as for fat cattle. In addition to this, cattle should conform to their own breed standards in size, color markings, and the presence or absence of horns. Breeding animals should have adequate bone structure and *quality* as indicated by pliable hides, silky coats, and desirable heads. *Natural fleshing* is paramount, because this is one distinguishing feature between beef cattle and dairy cattle. Fleshing refers to the amount of muscle or lean meat that an animal possesses. In addition, the value of breeding stock is enhanced by strong, correctly set *feet and legs*, and such a blending together of *all parts* as to give an animal style, symmetry, and balance.

Demonstrations

First, club members learn by doing, then they are given an opportunity to show others how to carry out practices by demonstrations. This activity is really a measure of what a club member has learned, and the kind of a job he has done as a feeder, record keeper, judge, and herdsman.

Demonstrations can be valuable experiences, especially to those who give them. They can be used to advantage at meetings as a way to teach.

If you would like to show others how to select, feed, or manage a steer, select a simple, practical one-theme idea or topic. Have your material well organized, and illustrate the points you wish to make. You must, of course, know your subject and speak from experience. Your appearance and forceful speaking ability is important, but the main purpose of your talk is to teach the audience how to put a valuable practice into use.

Those 4-H members who wish to develop a demonstration may get help from their leaders and 4-H Club agents. Outlines on a wide range of topics have been developed to guide club members in the preparation of demonstrations to show practices that the most successful cattle feeders and breeders use.

Fitting and Showmanship

Fitting and good showmanship is the art of preparing and displaying livestock to make them attractive in appearance to the prospective buyer.

Printed instructions that tell how to fit and show livestock are, however, no substitute for knowledge gained through years of experience in the show business. The following outline of general considerations is a useful guide for

beginners and serves as a review for experienced showmen. In addition to the proper feeding and care of cattle, you must do a number of things to advertise cattle effectively. Among these details are early halter-breaking, training, trimming feet, shaping horns (if present), exercising, washing, grooming, clipping heads and tails as needed, curling coats, making entries on time, and assembling your show equipment in an attractive show box with your name on it. Your personal appearance and the proper presentation of animals in the ring and barn are equally as important.

A score-card guide

In judging, fitting, and showmanship, the type of an exhibitor's animal is not considered except as it may affect the way it should have been prepared and presented.

The outline given below may be used as a fitting and showmanship score card. Fine or technical points should not be emphasized to an extent that they are given more weight than an effective job of

Figure 13. Many club members become expert in splicing rope and demonstrating how to make halters.

presenting a clean animal that has been properly developed, fed, fitted, and shown.

A. Appearance of Animal . . . 50 points
1. Condition and thriftiness
2. Grooming, cleanliness, and curling
3. Hoofs trimmed and shaped
4. Horns (if present) trained
5. Halter of right type, fits properly and is put on correctly

B. Appearance and Merits of Exhibitor . . . . . 15 points
1. Clothes and person, neat and clean
2. Ability to recognize and lessen faults of animal
3. Poise, posture, promptness, and attentiveness in the ring

C. Presenting the Animal in the Ring . . . . . 35 points
1. Move animals clockwise, walking with them
2. Line up the animals, side by side
3. Posing
4. Know position of the judge, but do not make it too obvious
5. Keep showing until ribbons have been awarded and judges' reasons have been given

Breaking calf to lead

Show day is a poor time to try to teach a steer or heifer to lead. As with grooming and fitting, successful jobs of training must be done at home. While it is true that a competent judge is seldom fooled by the art of a skillful fitter or showman, calves properly trained, fitted, and shown are likely to have an advantage on show day. You will have done your part well if you bring into the ring a well-trained, thoroughly clean, and well-groomed animal.

Teaching an animal to lead is the first step in training. By the end of the first month of your project, you should have your steer halter-wise and ready to lead out of his stall or pen. Of course, as soon as you tie your calf the first time or two, you can start to groom him. Cattle like to be brushed, and this bit of special attention will make you and your calf better friends. A quiet calf usually makes faster gains, too, than an unruly, nervous individual.

The next step is to teach the calf to stand properly, to lead readily, and to pose in such a way as to show him off advantageously. Each foot and leg should set squarely under the corner of his body so that it bears the full share of the steer's weight. The back should appear straight and the head held at the height of the back.

As you lead your calf out at home for inspection by visitors, pose him with the same care that you would in a judging ring. Continue to train your steer in this way for a few minutes at a time during the entire feeding period.

Most showmen like to use a show stick about 4½ feet in length as an aid in placing the feet of their cattle in the proper position. Show sticks may also be used to

Figure 14. This well-trained, properly posed and fitted 4-H steer is ready for the ring. Because of his short coat, only the rear quarters are curled.

advantage in the process of teaching cattle to pose correctly with their backs straight.

Making an adjustable rope halter[1]

Adjustable rope halters are necessary and practical on any farm that keeps cattle. Halters of this type are serviceable and yet inexpensive as only 13 feet of a 3-strand rope is needed for a cow or a 1000-pound steer. The four main steps or directions to follow in making a halter are to:

1. Measure off a nose piece.
   Hold the rope in your left hand at a point 24 inches from the short end to your right.
2. Make a loop splice.
   With the thumb and fingers of the right hand, raise the top two strands of the rope at the 24-inch point where it is being grasped by the left thumb and finger, and then with the right hand pass the end of the long rope underneath these two up-

[1]Available from your 4-H Club agent is 4-H Club Bulletin 105 that contains 18 photo-illustrations which will be helpful to you in making halters.

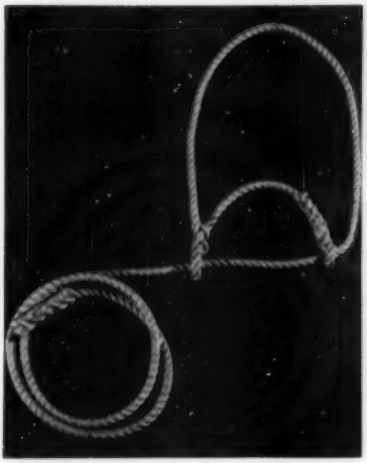

Figure 15. A rope halter like this one may be made by following the instructions.

raised strands in a direction away from you. Draw the long rope far enough through to form a loop with an opening 1½ inches in size.

Continue to hold the rope in the left hand at the 24-inch point, then pass the end of the short rope (nose piece) under two strands on the long rope immediately in front of the loop in a direction away from you. Draw it through far enough to complete or lock the loop.

3. Splice the nose piece tightly around the head piece to form a tight loop. To start the nose piece, raise the long rope with the right hand to form a head piece, then bend the last 6 inches of the short rope underneath and abruptly around the head piece. Next, turn the end of the short rope away from you at a right angle, remembering to hold the folded part firmly in position with the thumb and fingers of the left hand. Then, with the right hand, separate the strands by unlaying (untwisting) the rope from the short end for a distance of 6 inches.

Start to splice the three separated strands into the nose piece by tucking them one at a time under corresponding strands on the nose piece and in a direction away from you. Begin this job by tucking the center strand under the first visible nose-piece strand. Now tuck the other two strands in a similar manner, but do not pass them under the same strand where another strand has been tucked. After each strand has been tucked once, each of them alternately should be passed over the strand next to it and then tucked under the next one. This procedure should be continued until each strand has been tucked about five times.

Dampen nose-piece splice, roll it under your foot on a rough floor, and cut off the loose ends of the strands.

4. Assemble the halter and finish the end of the lead rope to prevent fraying. Pass the end of the long rope through the loop

splice from the inside. Finish the end of the rope by crowning, whipping, or by the use of the wall knot to prevent it from fraying.

Putting on finishing touches

Fitting really implies good feeding and management; therefore if your steer is fat and clean, he essentially may be very well fitted. In fact, most any steer of desirable beef type and weight that is fat and has been trained to lead and stand correctly may be about ready for the show. He should, however, be "dressed-up" a bit by some grooming, washing, polishing, curling, and clipping as may seem necessary and desirable.

Equipment for fitting and showing

Equipment need be neither elaborate nor expensive; some pieces can be made at home. You need the following: a rope halter, water bucket, show stick, clippers, circular curry comb, lining comb, scotch comb, a brush, and some soap. Other useful items may include horn weights, horn scrapers or a piece of glass, a rasp, a heavy

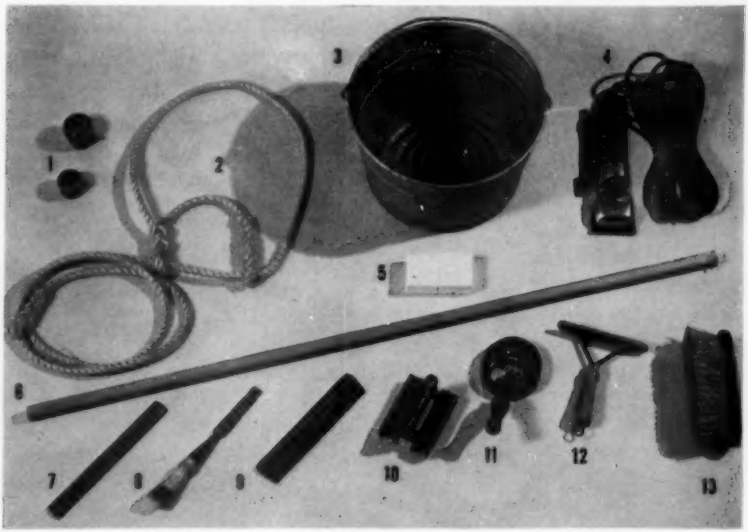

Figure 16. Equipment useful in the training, preparation, and showing of beef cattle:

1. Horn weights
2. Rope halter
3. Pail
4. Clippers
5. Soap
6. Show stick
7. Horn and hoof rasp
8. Wood chisel
9. Straight comb
10. Lining comb
11. Curry Comb
12. Scotch comb
13. Brush

Figure 17. Horn training improves the appearance of heads. The horns shown at the left need to be curved downward more to correspond to those illustrated in the picture at the right.

comb, some fine sandpaper or emery cloth and some fitting oil. Equal parts of sweet oil and denatured alcohol makes a good oil for fitting.

Horn training

Horn training should be started early. A good time to begin this job is when the horns are from 5 to 6 inches in length. Weights of ½ pound are heavy enough when put on at this time. They should be put on for a week then taken off for three to four days and the procedure repeated. Horns to look best should curve downward, inward, and forward. For a week or two before the show, scrape and polish the horns to remove roughness. Rough or straight horns detract from the appearance of a steer.

You may solve your problem with horns by having your steers dehorned. Dehorning is especially recommended where two or more steers are fed together.

Clipping

Clipping makes the heads look cleaner cut, more shapely, and the poll more sharply defined, and

Figure 18. Clipping is easier when cattle are held in a stanchion or cattle chute.

adds an appearance of quality. Clipping is confined only to the heads and tails of Angus steers and breeding cattle and to polled or dehorned Shorthorn and Hereford steers. The clipping preferably should be done a month before the show and then again from three days to a week before show time. With all breeds (both sexes), the tail bone is clipped from a point above the switch (figures 19 and 23) to the tail head. Blend off the hair gradually and smoothly with the rump. The ears are usually untouched and the eyebrows and long hair around the nose are not clipped. Clip the head to a

Figure 19. Clip the short hair off the tail bone. Begin to clip well above the switch and blend the hair on the tail setting smoothly into the rump.

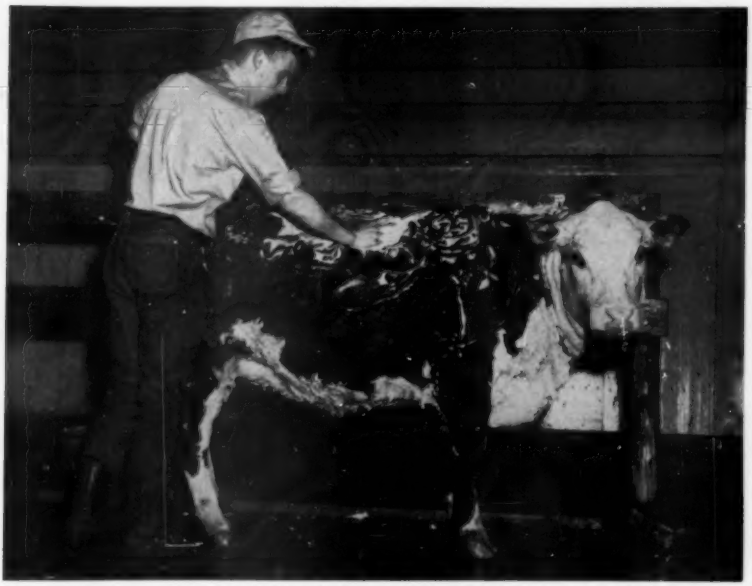

Figure 20. Soap while the hair is full of water. Work up a heavy lather. Use a good mild soap and rinse the hair thoroughly afterward.

point behind the ears where the halter strap or rope crosses.

The heads of *Shorthorn* and *Herford* breeding cattle should not be clipped.

Brushing and washing

Brushing and washing improves an animal's appearance. Frequent brushing helps to keep the coat clean and the hide and hair in good condition. One washing a week during the last month is not too often if soft water and tar soap are used. Work up a heavy lather in the steer's coat, brush the coat briskly, then thoroughly rinse the soap out. Do not wash animals in cold weather unless you can dry and blanket them and house them in warm quarters, free of drafts.

Washing keeps your steer clean, helps to make the hair soft and fluffy, and tends to stimulate hair growth.

Curling

Curling is practiced especially on cattle that have long fluffy hair and is done to improve the general outline of the body.

Two general methods of curling may be used: (1) Curl the hair all over the body if the coat is long; or (2) curl the hair on the shoulder, neck, and rear quarters, and smooth down the hair on the sides.

At least an hour before the show, wet the hair and brush it down smoothly on each side of the body; then part the hair down the center of the back from the neck

Figure 21. To curl Angus cattle, first draw parallel lines with a marking comb. Next brush or comb the hair upward. Curl Shorthorn cattle the same way.

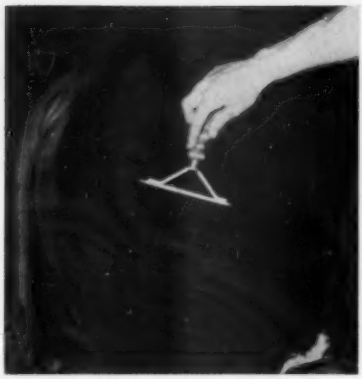

Figure 22. After you have lined or waved the coat, comb the hair upward with a scotch comb or brush.

to the tail setting, and comb it out to the extreme top edge portion of the back and loin.

For Angus and Shorthorn cattle, draw parallel lines with a marking comb from rear to front, beginning at the pin bones and continuing forward and over the point of the hip along the edge of the level portion of the back to the shoulders. Continue this marking of parallel lines about 1 inch apart over the sides and over the legs to the hocks and knees.

After all lines have been made, lightly brush or comb the hair up to make it stand out from the sides of the body. The hair on top of the back may be brushed out flatly to the upper line or it may be brushed upward over the back from each side if the hair is long enough to curl. To emphasize width of rear quarter, brush the hair sidewise from the center as shown in figure 19.

In curling a Hereford, wave the wet, flatly brushed hair downward on each side of the body with a circular type of curry comb. Begin the wave at the center of the top line. Then, comb the hair upward over the animal's sides and back with a Scotch comb or a coarse straight comb if the hair is long enough. The hair on the top line just back of the shoulders may be brushed out flat.

It is difficult to curl a short-haired animal over the entire

Figure 23. This Hereford is ready for the show. The switch is fluffed, the tail clipped, the hair on rear quarters brushed outward from center to sides, and the hair coat brushed up over the sides.

body; usually only the hind quarters are curled, as shown in figure 14. The hair over the remainder of the body may be rubbed briskly when dry with a woolen cloth slightly dampened with a fitting oil, then brushed down smoothly. The amount of curling to do and the general method to use may be varied to suit your own animal.

Some Success Practices

Over a period of many years those 4-H baby-beef club members who have kept in mind the following practices have been the most successful. Some of their methods and experiences may serve as useful guides to you.

1. Start with a good calf, purchased at a reasonable price.
2. Halter-break your calf the first month, then lead and groom him frequently thereafter.
3. Build a hay rack and a large, sturdy grain box, and feed the recommended rations as closely as possible.
4. Keep feed boxes clean, and use lots of bedding to keep the pen dry and the steer comfortable.
5. Provide salt, minerals, and fresh water — free-choice style.
6. Feed the grain ration at regular hours and all that your steer will clean up in an hour or so after each feeding.
7. Allow calves daily outdoor exercise during summer and winter.
8. Select and start to feed your steers in October or November and keep them on a full grain feed continuously until sale time in August or September.
9. Keep a record of the amounts and kinds of feed used, costs of gains produced, and the returns above feed costs.
10. Train, groom, and show your cattle to make them attractive at show and sale time.

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